
**Tank Inventory Report
Denver Veteran Affairs Medical Center
1055 Clermont Street, Denver, Colorado
MEC^x Project No. 1244.013D.00
Contract GS-10F-0328R – VA259-10-F-3057**

Prepared for:

Department of Veteran Affairs
Denver Veteran Affairs Medical Center
1055 Clermont Street
Denver, Colorado

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Table of Contents

Introduction.....	1
Background.....	1
Tank Inventory.....	1
Tank Removal Approach and Cost Estimate.....	4

Tables

Table 1:	Storage Tanks
Table 2:	Transformers

Acronyms

AST	Aboveground Storage Tank
CDLE	Colorado Department of Labor and Employment
CDPHE	Colorado Department of Public Health and Environment
COSTIS	Colorado Storage Tank Inventory System
DVAMC	Denver Veteran Affairs Medical Center
LEL	Lower Explosive Level
OPS	Oil and Public Safety
RCRA	Resource Conservation and Recovery Act
RFQ	Request for Quote
SOW	Statement of Work
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VA	Department of Veterans Affairs
VAMC	Veteran Affairs Medical Center



Introduction

MEC^x is pleased to present the Denver Veteran Affairs Medical Center (DVAMC; Client) Tank Inventory Report for the DVAMC located at 1055 Clermont Street in Denver, Denver County, Colorado (Site). The Tank Inventory was performed as part of a Hazardous Material Assessment conducted by MEC^x for the Site. The work was completed in accordance with the terms and conditions outlined in the technical proposal issued to DVAMC by MEC^x (dated June 27, 2013) in response to solicitation number VA-259-13-R-0722.

Background

The Department of Veterans Affairs (VA) issued a Request for Quote (RFQ) and accompanying Statement of Work (SOW) for completing a Hazardous Material Assessment of the DVAMC (also referred to as the Eastern Colorado Health Care System – Denver Campus) located in the City and County of Denver, Colorado at 1055 Clermont Street.

The goal of the Hazardous Materials Assessment was to identify and determine the condition of hazardous materials within the VAMC in anticipation of transfer or demolition of the facility when the DVAMC relocates to new facilities. Subtask 1 of the Hazardous Materials Assessment was to complete an inventory of storage tanks and transformers located throughout the VA facility.

Tank Inventory

On November 8, 2013, MEC^x performed a site walk of the DVAMC facility to verify the location and condition of storage tanks currently in use at the facility. At the time of the site walk, only tanks containing fuels were inventoried. This inventory can be found in *Table 1*. The tanks are depicted in Figures 1-9.

In addition to the tanks currently in use at the DVAMC, the DVAMC had one 8,000 gallon heating oil tank removed in 1998, three 1,000 heating oil tanks permanently closed, one gasoline tank of unknown capacity permanently closed, and one 12,000 gallon diesel tank permanently closed. When the heating oil tanks were removed and replaced with the current four 20,000 gallon tanks, the fill pump outside of Building 8 was also removed. The tank beneath Building 25 was made inert as the form of closure.

Both aboveground storage tanks (ASTs) and underground storage tanks (USTs) were utilized for the storage of petroleum products were included in the inventory. Tank sizes, construction materials, and contents were obtained from information provided by the VA and Colorado Department of Labor and Employment (CDLE), Division of Oil and Public Safety, Colorado Storage Tank Information System (COSTIS) Database.

The Scope of Work issued by the VA requested that all oil-filled, pad-mounted electrical transformers be included as ASTs; therefore, MEC^x verified the location of transformers located at the facility. The inventory of transformers can be found in *Table 2*. MEC^x was not able to access the transformer located within Building 39.

In addition to the petroleum containing tanks, the facility has two oil-water separators, petroleum products reserved for the maintenance of equipment, equipment with oil reservoirs including: three hydraulic lift systems in the elevator systems in Building 1, E-Wing and in the system servicing



Building 19 and Building 21. The facility also maintains a vegetable oil disposal unit on the east side of Building 24.

Table 1 Storage Tanks

Tank No.	Tank Location	Material Stored	Tank Capacity (gal)	Description	Tank Purpose	CDLE Tank Tag
1	Tank Farm near Building 7	No. 2 Diesel	20,000	Double Walled Steel UST	Heating oil for boilers	2114-8
2	Tank Farm near Building 7	No. 2 Diesel	20,000	Double Walled Steel UST	Heating oil for boilers	2114-9
3	Tank Farm near Building 7	No. 2 Diesel	20,000	Double Walled Steel UST	Heating oil for boilers	2114-10
4	Tank Farm near Building 7	No. 2 Diesel	20,000	Double Walled Steel UST	Fuel for emergency generators	2114-11
5	Building 8	No. 2 Diesel	250	Double Walled Steel AST	Fuel for emergency generator	NA
6	South Side of Building 18	Diesel	250	Double Walled Steel AST	Fuel for grounds equipment	NA
7	South Side of Building 18	Unleaded Gasoline	250	Double Walled Steel AST	Fuel for grounds equipment	NA
8	East End of Building 25	No. 2 Diesel	500	Double Walled Steel AST	Fuel for emergency generators	2114-5
9	Building 38	No. 2 Diesel	28	Double Walled Steel AST	Emergency generator day tank	NA
10	West of Building 38	No. 2 Diesel	500	Double Walled Steel UST	Fuel for emergency generator	2114-13
11	Building 39	No. 2 Diesel	100	Double Walled Steel AST	Emergency generator day tank	NA
12	South of Building 39	No. 2 Diesel	4,000	Single Walled Steel UST	Fuel for emergency generator	2114-12



Table 2 Transformers

Transformer No.	Transformer Location	Transformer Capacity (gal)
1	South Side of Chapel, Building 1	350
2	South Side of Chapel, Building 1	350
3	Northeast Side of Building 1 between Building 1 and Building 38	350
4	Northeast Side of Building 1 between Building 1 and Building 38	350
5	South of Clermont Street Building 1 Entrance, North of Building 1, E-Wing	350
6	South of Clermont Street Building 1 Entrance, North of Building 1, E-Wing	350
7	Within Building 39*	200
8	Northeast of Building 4, Corner of Hale Parkway and Clermont	161
9	West Side of Building 1, Outside of Chiller Room	642
10	West Side of Building 1, Outside of Chiller Room	642
11	West Side of Building 1, Outside of Chiller Room	490
12	West Side of Building 1, Outside of Chiller Room	450
13	North Side of Building 21	295
14	Northwest Corner of Building 24	220
15	Southeast Corner of Building 8	293
16	Northwest Corner of Building 23	350
17	Southeast Corner of Parking Garage	450
18	Northwest Corner of MRI Building	350

*Transformer 7 in Building 39 was not field verified



Tank Removal Approach and Cost Estimate

MEC^x has prepared an approach for the removal of USTs, ASTs, and AST transformers. This approach is a general approach and assumes that the tanks are intact and full at the time of removal. Should the tanks be determined to be leaking, an investigation of the area surrounding the tanks will have to be performed to determine the nature and extent of the contamination resulting from the leak.

Removal Approach

The VA will need to contract an environmental contractor to remove and appropriately dispose of the USTs and ASTs at the Site. Underground product lines that are encountered will be removed. Once the USTs and product lines have been removed, the contractor should collect soil samples in accordance with Colorado regulations. The total number of samples of environmental media (soil and groundwater) required will be determined by the excavation dimensions, linear feet of product lines, and site conditions. Soil samples will be collected from: excavation sidewalls, beneath the tank (unless groundwater is encountered, and then soil samples will be limited to tank walls), pipe trench excavations, and on the supply side of the former dispensers. Soil samples may need to be collected from the ASTs should staining or other visual evidence of leakage be encountered.

Upon the completion of removal and sampling of designated environmental media, the contractor will prepare a closure report for the tanks system removal for submittal to the CDLE OPS.

The UST systems will be removed in accordance with Colorado requirements as further described below.

- Observation and documentation of the removal by an environmental professional.
- Utility locates should be requested in advance by first contacting the local utility location service and then engaging a private utility location service.
- Personnel used for the management of any contaminated materials encountered will have received a minimum of forty hours training in hazardous materials management in accordance with 29 CFR 1910.120.
- The UST contractor will remove overburden and surrounding soil from the tank hold and piping trenches.
- Once the USTs are exposed, the tank contractor will remove the remaining free liquids, and/or fuel product, if any, utilizing a standard vacuum truck.
- The tank will be rendered inert, <10% lower explosive limit (LEL), by pressure washing with a water/surfactant solution. The LEL will be monitored using a calibrated combustible gas indicator.
- Once removed from the ground, the tanks will be rendered inoperable; labeled in accordance with local, state and federal requirements; loaded/transported to an approved disposal/recycling facility for final disposition. A Certificate of Destruction will be provided as verification of proper tank disposal.
- Colorado-prescribed laboratory analyses will be completed as part of the removal activities.
- Fieldwork, laboratory analyses, and preparation of the required reports and forms for removal of the USTs.



- The tank pit will be backfilled with clean fill material and the ground surface will be returned to pre-excavation conditions.

The AST systems should be removed in accordance with Colorado requirements as further described below:

- Observation and documentation of the removal by an environmental professional.
- Utility locates should be requested in advance by first contacting the local utility location service and then engaging a private utility location service.
- Personnel used for the management of any contaminated materials encountered will have received a minimum of forty hours training in hazardous materials management in accordance with 29 CFR 1910.120.
- Prior to the removal of product from ASTs which had the potential to contain PCBs, samples should be collected and submitted to a CDPHE approved laboratory for PCB analysis. Once the analytical results indicate that no PCBs are present the product may be removed and the tank removed.
- Product will be removed from the ASTs utilizing pumps and/or a vacuum truck.
- The ASTs will be rendered inert by pressure washing with a water/surfactant solution. The LEL will be monitored during the process using a calibrated combustible gas indicator.
- The tanks will be rendered inoperable; labeled in accordance with local, state and federal requirements; loaded/transported to an approved disposal/recycling facility for final disposition. A Certificate of Destruction will be provided as verification of proper tank disposal.
- The area under the tank will be observed for indications of leakage. If leakage is indicated then additional efforts similar to an UST removal will be followed.
 - Colorado-prescribed laboratory analyses will be completed as part of the removal activities.
 - Fieldwork, laboratory analyses, and preparation of the required reports and forms for removal of the USTs.
 - The tank pit will be backfilled with clean fill material and the ground surface will be returned to pre-excavation conditions.

Costs

MEC^x has prepared rough order of magnitude costs for the removal of USTs, ASTs, and AST transformers. The removal costs assume that none of the tanks are found to be leaking or have indications of historical leaks in the existing tank holds or product transfer lines. The estimates also assume that none of the AST transformers contain PCBs.



					Tank Removal / Disposal / Closure Costs			
Tank No.	Tank Location	Material Stored	Tank Capacity (gal)	Description	Removal / Disposal Unit Cost (per gallon)*	Total Removal / Disposal Costs	Closure Sampling / Reporting**	Total Removal / Disposal / Closure Costs
1	Tank Farm near Building 7	No. 2 Diesel	20,000	Double Walled Steel UST				
2	Tank Farm near Building 7	No. 2 Diesel	20,000	Double Walled Steel UST				
3	Tank Farm near Building 7	No. 2 Diesel	20,000	Double Walled Steel UST				
4	Tank Farm near Building 7	No. 2 Diesel	20,000	Double Walled Steel UST				
5	Building 8	No. 2 Diesel	250	Double Walled Steel AST				
6	South Side of Building 18	Diesel	250	Double Walled Steel AST				
7	South Side of Building 18	Unleaded Gasoline	250	Double Walled Steel AST				
8	East End of Building 25	No. 2 Diesel	500	Double Walled Steel AST				
9	Building 38	No. 2 Diesel	28	Double Walled Steel AST				
10	West of Building 38	No. 2 Diesel	500	Double Walled Steel UST				
11	Building 39	No. 2 Diesel	100	Double Walled Steel AST				
12	South of Building 39	No. 2 Diesel	4,000	Single Walled Steel UST				

Notes:

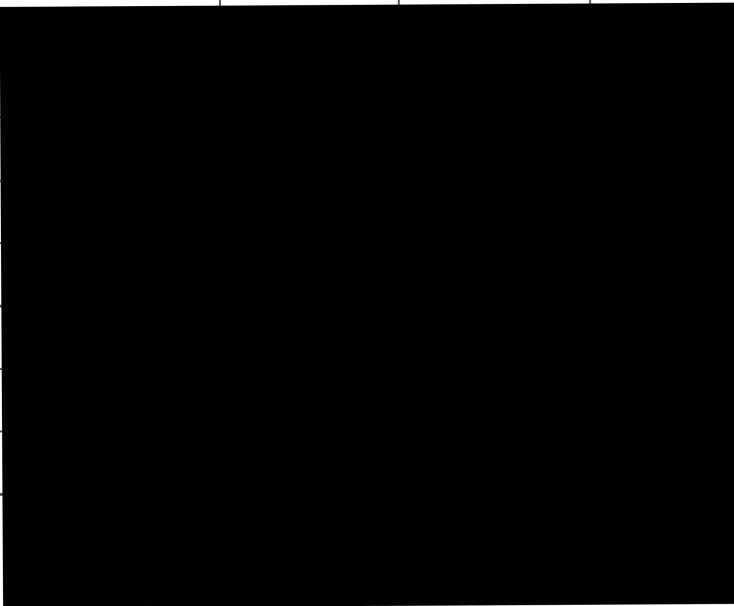
* Unit costs for removal / disposal services assumes tank is full at time of removal

** Closure Sampling / Reporting Costs assume that none of the tanks are found to be leaking



			Transformer Removal / Disposal / Sampling Costs			
Transformer No.	Transformer Location	Transformer Capacity (gal)	Removal / Disposal Unit Cost (per gallon)*	Total Removal / Disposal Costs	Sampling / Analytical / Reporting Costs	Total Removal / Disposal / Closure Costs
1	South Side of Chapel, Building 1	350				
2	South Side of Chapel, Building 1	350				
3	Northeast Side of Building 1 between Building 1 and Building 38	350				
4	Northeast Side of Building 1 between Building 1 and Building 38	350				
5	South of Clermont Street Building 1 Entrance, North of Building 1, E-Wing	350				
6	South of Clermont Street Building 1 Entrance, North of Building 1, E-Wing	350				
7	Within Building 39	200				
8	Northeast of Building 4, Corner of Hale Parkway and Clermont	161				
9	West Side of Building 1, Outside of Chiller Room	642				
10	West Side of Building 1, Outside of Chiller Room	642				
11	West Side of Building 1, Outside of Chiller Room	490				



Transformer No.	Transformer Location	Transformer Capacity (gal)	Removal / Disposal Unit Cost (per gallon)*	Total Removal / Disposal Costs	Sampling / Analytical / Reporting Costs	Total Removal / Disposal / Closure Costs
12	West Side of Building 1, Outside of Chiller Room	450				
13	North Side of Building 21	295				
14	Northwest Corner of Building 24	220				
15	Southeast Corner of Building 8	293				
16	Northwest Corner of Building 23	350				
17	Southeast Corner of Parking Garage	450				
18	Northwest Corner of MRI Building	350				

*Assumes no PCB containing materials.



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Figures



Figure 1 - Tanks 1-4, Tank Farm near Building 7



Figure 2 - Tank 5, Emergency Generator Day Tank Building 8



Figure 3 - Tank 6, Diesel AST South Side of Building 18



Figure 4 - Tank 7, Unleaded Gasoline AST South Side of Building 18



Figure 5 - Tank 8, Emergency Generator Building 25



Figure 6 - Tank 9, Emergency Generator Day Tank Building 38



Figure 7 - Tank 10, UST for Emergency Generator West Side of Building 38



Figure 8 - Tank 11, Emergency Generator Day Tank Building 39

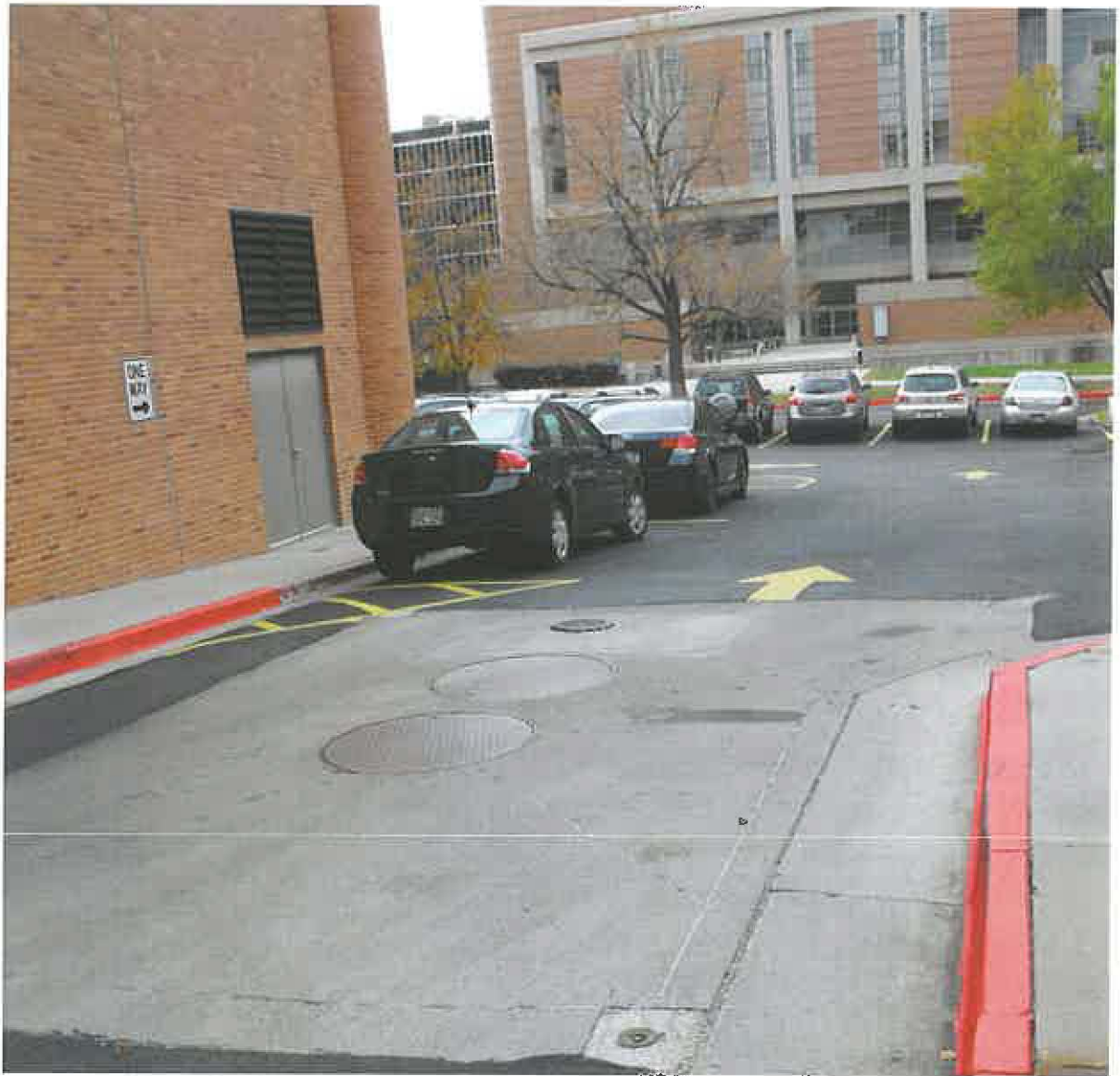


Figure 9 - Tank 12, UST for Emergency Generators South of Building 39